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POLYPORACEAE AND BOLETACEAE OF THE PACIFIC COAST

WILLIAM A. MURRILL

The following list contains the species of pileate polypores and boletes collected by the writer on a recent tour of exploration through Washington, Oregon, and California. Mr. S. M. Zeller collected with me at Seattle and Tacoma; Professor L. S. Abrams assisted in exploring Preston's Ravine and La Honda. The localities and dates of the collections are as follows:

1. Seattle, Washington; virgin coniferous forests, peat bogs, and pastures.
October 20–November 1, 1911.
2. Tacoma, Washington; virgin coniferous forests. October 26, 1911.
3. Tacoma Prairies, Washington; open barrens with clumps of young firs.
October 26, 1911.
4. Glen Brook, Oregon; dense fir forests, 400–1000 ft. . . November 7, 1911.
5. Mill City, Oregon; virgin coniferous forest, 800–1200 ft. . . November 9, 1911.
6. Corvallis, Oregon; fir forests and mixed woods. . . . November 6–11, 1911.
7. Newport, Oregon; virgin fir forest and sandy pine barrens.
November 13, 1911.
8. Golden Gate Park, San Francisco, California; dry groves and shaded
grassy banks. November 21, 1911.
9. Muir Woods, California; virgin forest of redwoods. . . November 22, 1911.
10. Preston's Ravine, near Palo Alto, California; redwoods and mixed forest
up to 1000 ft. November 25, 1911.
11. La Honda, west slope of Santa Cruz Mountains, California; redwood
forest below 1000 ft. November 25, 1911.

Tribe POLYPOREAE

AURANTIPORELLUS ALBOLUTEUS (Ell. & Ev.) Murrill. Found growing from the side of a decorticated red fir log, the pilei consisting chiefly of large, irregular tubes, and presenting a very different appearance from the original specimens found by Crandall inside of hollow *Abies* trunks in Colorado.

Seattle, 72.

BJERKANDERA ADUSTA (Willd.) Karst. Found only on large-leaved maple.

Seattle, 65, 74.

COLTRICIA PERENNIS (L.) Murrill. Quite common in dry, sandy places in woods.

Seattle, 44; Tacoma, 68.

CORIOLUS ABIETINUS (Dicks.) Quél. Common on dead coniferous trunks. No trace was found of *C. prolificans*, a near relative so abundant on deciduous wood in the eastern United States.

Seattle, 71; Glen Brook, 757.

CORIOLUS NIGROMARGINATUS (Schw.) Murrill. Rarely seen, but abundant in places.

Seattle, 46.

CORIOLUS VERSICOLOR (L.) Quél. Common on oak and maple in Oregon and California. Not seen at Seattle.

Corvallis, 883; Newport, 1075; Preston's Ravine, 1163; Muir Woods, 1149.

Coriolus washingtonensis sp. nov.

Pileus small, dimidiate, sessile, laterally connate, slightly decurrent behind, sometimes effuse, tough, flexible, milk-white throughout, becoming slightly yellowish above on drying, and grayish behind with age, projecting about 5 mm. from the substratum, extending sometimes 10 cm. along cracks in the bark, reaching 5 mm. in thickness behind; surface azonate, smooth, subglabrous, margin undulate or lobed, sterile, rather thick for the genus; context thin, soft, flexible; tubes 1-4 mm. long, corky, mouths regular, glistening, slightly angular, 2 to a mm., edges thin, entire; spores ovoid, smooth, hyaline, $5 \times 3.5\mu$.

Growing from crevices in the bark of a dead log of *Thuja plicata*. It somewhat resembles *Coriolellus Sepium* in shape, but the pilei are scarcely semi-resupinate, the tubes are regular, and the context is much more flexible.

Seattle, 101 (*type*).

ISCHNODERMA FULIGINOSUM (Scop.) Murrill. Found once, on a decaying red fir log.

Seattle, 102.

LAETIPORUS SPECIOSUS (Battar.) Murrill. Collected once, on an oak log, but not uncommon on the Coast.

Tacoma, 82.

PHAEOLUS SISTOTREMOIDES (Alb. & Schw.) Murrill. Common about coniferous stumps, springing from decaying roots.

Seattle, 77; Muir Woods, 1137.

POLYPORUS ELEGANS (Bull.) Fries. Common about Seattle on fallen alder branches.

Seattle, 62, 86; Corvallis, 885½.

***Scutiger oregonensis* sp. nov.**

Pileus ascending, depressed behind, reniform, irregular, fleshy-tough, solitary, 15 cm. wide, 25 cm. long, 3 cm. thick behind; surface dry, dark-fulvous, uniformly and densely imbricate-floccose-scaly, the ends of the scales either slightly upturned or at an angle of 45°, margin concolorous, fertile, lobed or undulate, bay when bruised; context white, nutty, thin, fragile when fresh, with the odor of musty meal when dry; tubes white, tinged with sulfur-yellow when bruised, decurrent, mouths regular, thin-walled, 1 mm. in diameter, edges uneven, toothed; spores ovoid, smooth, hyaline, $8-10 \times 5 \mu$; stipe eccentric, inflated, 7 cm. long, 8 cm. thick, irregular, watery-white to flavous, turning sulfur-yellow when bruised, resembling the pileus above at the point of attachment and not reticulate behind.

This large and handsome species was collected November 9, 1911, on a rocky bank among giant red firs to the north of Mill City, Oregon, at an elevation of 1,200 ft. Its nearest relative is *Scutiger retipes*, known only from Alabama, from which it differs in many important characters.

Mill City, Oregon, 847 (*type*).

***Spongipellis sensibilis* sp. nov.**

Pileus flabelliform-conchate, narrowly attached, tough, very juicy, white throughout, changing color very quickly when bruised or on drying, about 3-4 cm. long, 6 cm. broad, and 1.5-2 cm. thick behind; surface spongy-tomentose, azonate, somewhat uneven, changing at once to melleous when bruised and at length to bay, margin entire, regular, very sensitive to handling, thin, scarcely deflexed on drying; context duplex, white, thick, azonate and friable when dry above, zonate and woody below, changing color like the surface when bruised; tubes about equalling the thickness of the context, small, at first very white and glistening, changing quickly to bay when bruised, mouths circular, even, slightly angular, friable and easily corroded on drying, 4-5 to a mm., edges very thin, long-toothed, becoming lacerate at times; spores ovoid, smooth, hyaline, $5 \times 3 \mu$.

This species was rather common about Seattle on fallen logs and branches of red fir in moist situations. At Glen Brook, Oregon, it was found on *Abies*. When touched, it turns at once to honey-yellow and later to bay, and some color approaching bay is usually assumed by all or a portion of the sporophore on drying. Paper touching the fresh specimens is stained ferruginous and then bay.

Seattle, 43 (*type*), 54, 79, 91; Glen Brook, 791; Corvallis, 996.

TYROMYCES CAESIUS (Schrad.) Murrill. On dead trunks of *Abies grandis* and other conifers.

Seattle, 70, 87.

***Tyromyces carbonarius* sp. nov.**

Pileus quite irregular in shape, varying from flabelliform to broadly sessile and laterally elongate, juicy, tough, fragile when dry, $1 \times 1.5-3 \times 0.5-1$ cm.; surface tomentose to glabrous, uneven, white or hygrophanous, azonate, margin pale rose-tinted, rather thick, concolorous, narrowly sterile, undulate, rarely lobed; context white, tough to fragile; tubes equalling the thickness of the context, white within, mouths normally rather regular, subcircular, 4 to a mm., not glistening, edges white or pale rose-tinted, thin, sometimes irpiciform; spores oblong-ellipsoid, smooth, hyaline, $5 \times 1.5-2 \mu$.

Collected on a burnt red fir log. The tubes may be very irregular at times, with long dissepiments, suggesting *Irpiciporus*. There is a faint roseate hue to the hymenium which is quite characteristic and rarely seen in species of this genus and its near relatives.

Seattle, 64 (*type*).

TYROMYCES CHIONEUS (Fries) Karst. Collected once, on an oak stump.

Corvallis, 904.

***Tyromyces cutifractus* sp. nov.**

Pileus usually broadly attached and laterally elongate, rarely flabelliform, slightly imbricate at times, $2-3.5 \times 4-6 \times 0.5-0.8$ cm.; surface glabrous, white, often rough and unsightly because of the cracked and torn reddish-brown cuticle; context rather thick, firm, almost woody, but friable, milk-white; tubes slender, 2 or 3 times as long as the thickness of the context, white or

yellowish within and without, staining brownish when bruised, mouths glistening, small, quite regular, angular, edges entire, very thin; spores ellipsoid, smooth, hyaline, $6 \times 4 \mu$.

Type collected on a much decayed fir log in a virgin forest at Newport, Oregon. Also collected on a maple log and on the base of a living trunk of *Thuja* at Seattle. This disregard of essential differences between coniferous and deciduous wood is rather uncommon in fungi. The species is peculiar in having a brownish cuticle, gelatinous in appearance when wet, which breaks up as the pileus develops, leaving the surface very rough and unattractive in appearance, especially when plants are growing in moist situations.

Seattle, 55, 99; Newport, 1064 (*type*).

***Tyromyces perdelicatus* sp. nov.**

Pileus flabelliform to subcircular, varying with its position on the substratum, thin, fragile, milk-white throughout, 1–2 cm. broad; surface finely tomentose to glabrous, scarcely zonate, uneven, margin concolorous, thin, inflexed when dry; context very thin, white, fragile; tubes minute, glistening, mouths angular, subregular, edges very thin, slightly toothed, fragile; spores oblong-ellipsoid, smooth, hyaline, $7 \times 3 \mu$.

This small, snow-white species was collected several times at Seattle on fallen dead branches of conifers, and it was also found common at Glen Brook. The type specimens grew on *Tsuga heterophylla*.

Seattle, 45, 47 (*type*), 51, 53; Glen Brook, 780.

TYROMYCES GUTTULATUS (Peck) Murrill. Rare on coniferous stumps and logs. This species contains a bitter principle mi'dly resembling in taste the resin found in *Fomes Laricis*.

Seattle, 59; Tacoma, 98.

***Tyromyces Pseudotsugae* sp. nov.**

Pileus imbricate-sessile, flabelliform to semicircular, $2-3 \times 2-3 \times 0.3-1$ cm.; surface milk-white, subglabrous, azonate or with zones faintly outlined, margin thin, concolorous, narrowly sterile, entire to slightly lobed, inflexed when dry; context thin, white, fragile; tubes varying greatly in length, those behind often reaching nearly 1 cm., mouths large, irregular, edges thin, fragile, toothed, collapsing, white, becoming yellowish on drying; spores ovoid, smooth, hyaline, $5 \times 3.5 \mu$.

Collected on a dead log of *Pseudotsuga taxifolia*.

Seattle, 84 (*type*).

TYROMYCES SEMIPILEATUS (Peck) Murrill. Common on fallen trunks and branches of alder and maple.

Seattle 58, 67; Corvallis, 950; Muir Woods, 1129; Preston's Ravine, 1183.

Tyromyces substipitatus sp. nov.

Pilei subcespitose, at times united above, irregularly sub-circular or flabelliform, depressed, milk-white throughout, 2-4 cm. broad, 2-3 cm. high, 2-3 mm. thick; surface glabrous, uneven, lightly marked with irregular, radiating, raised lines, margin thin, concolorous, sterile, undulate or slightly lobed, slightly blackening when bruised; context fleshy, fragile when dry, very thin; tubes small, regular, fragile, collapsing, edges thin, toothed; spores ovoid, smooth, hyaline, $4 \times 2.5\mu$; stipe erect, lateral or subcentral, enlarging upward, reticulated on one side, owing to the undeveloped tubes, 1-2 cm. long, 2-4 mm. thick.

On rich soil mixed with humus, but not attached to wood. The species is aberrant, partly on account of its habit of growing upward from the ground, and might be classed with the stipitate forms of the polypores. It is closely related, however, to *Tyromyces semisupinus*, and may as well be placed in that genus as in any other.

Seattle, 75 (*type*).

Tribe FOMITEAE

CRYPTOPORUS VOLVATUS (Peck) Shear. Frequent on dead coniferous trunks.

Seattle, 80; Glen Brook, 792; Golden Gate Park, 1106.

ELFVINGIA MEGALOMA (Lév.) Murrill. Common and abundant in every locality visited, usually on oak logs and stumps.

Seattle, 49; Tacoma, 94; Corvallis, 1001, 1008; Muir Woods, 1151.

FOMES ANNOSUS (Fries) Cooke. Found several times on logs and stumps of red fir. It is probably common on conifers but difficult to find because inconspicuous and often hidden.

Seattle, 89, 93; Newport, 1089.

FOMES LARICIS (Jacq.) Murrill. On fallen, much decayed logs of *Abies grandis*, about one-half way up from the base, at Tacoma; and growing from the center of the butt of an immense red fir log, at Mill City. Specimens from La Honda, collected by Crandall on a red fir stump, were examined at Stanford University. This species is more abundant in the far west than was formerly supposed.

Tacoma, 95, 104; Mill City, 817.

FOMES ROSEUS (Alb. & Schw.) Cooke. Very common on coniferous trunks, the sporophores sometimes reaching a foot in diameter.

Seattle, 60; Corvallis, 917; Newport, 1046.

FOMES UNGULATUS (Schaeff.) Sacc. So abundant everywhere on coniferous trunks that only one collection was made.

Seattle, 85.

PORODAEDALEA PINI (Thore) Murrill. Frequently found on red fir, and doubtless occurring on other conifers. The specimens from Glen Brook grew on a living red fir trunk over six feet in diameter.

Seattle, 90; Glen Brook, 786; La Honda, 1298.

PYROPOLYPORUS IGNIARIUS (L.) Murrill. Common on trunks of living willows at Tacoma.

Tacoma, 100.

Tribe AGARICEAE

GLOEOPHYLLUM HIRSUTUM (Schaeff.) Murrill. Found rarely, on dead conifers.

Seattle, 50, 61.

LENZITES BETULINA (L.) Fries. Found once, on a dead oak limb ten feet from the ground.

Preston's Ravine, 1181.

Family BOLETACEAE

Boletus Lakei sp. nov.

Pileus convex, often becoming plane, gregarious or subcespitose, rarely solitary, 8-12 cm. broad; surface fulvous with latericeous tints, appearing testaceous, densely imbricate-floccose-

scaly, owing to the rupture of the cuticle; margin white, sterile, entire, involute when young; context sulfur-yellow, unchanging or turning slightly yellowish-green when cut, with pleasant odor and mild flavor; tubes large, decurrent, elongate near the stipe, flavous when young, dark dirty-flavous with a greenish tint when older, unchanging when bruised; spores oblong-ellipsoid, smooth, yellowish-brown, $8.5-10.5 \times 3.5\mu$; stipe subequal, 7×2 cm., flavous at the apex, then testaceous, then adorned with the ample, white, persistent, cottony annulus, and below this similar to the pileus in color and surface markings.

This species is similar to *B. luteus* and takes its place in the flora of the Pacific Coast; but the tubes are larger and the surface is floccose-scaly. At Corvallis it was very abundant in fir woods mixed with a few deciduous trees. It gives me pleasure to dedicate this handsome species to Professor E. R. Lake, of the Oregon Agricultural College, who some time ago sent me specimens for determination collected by him at Corvallis, November 29, 1907. This type collection was accompanied by notes and an excellent photograph.

Seattle, 113; Glen Brook, 781; Corvallis, 933, 999; La Honda, 1293.

CERIOMYCES COMMUNIS (Bull.) Murrill. Common about Seattle, but rare in other localities. Several varieties were found.

Seattle, 107, 115; Mill City, 871; Newport, 1084; La Honda, 1295.

***Ceriomyces mirabilis* sp. nov.**

Pileus convex, spongy, solitary or gregarious, reaching 12 cm. in diameter; surface moist, bay, uniformly covered with conspicuous, projecting, conic, floccose, persistent papillae, which give it somewhat the appearance of bread-fruit; margin projecting like the eaves of a house, showing a yellow membrane 2-3 mm. wide; context citrinous, slowly changing to incarnate when bruised, very watery, drying with difficulty, tasteless; tubes large, greenish-yellow, uneven; spores fusiform, smooth, ochraceous-mellous, $19 \times 7\mu$; stipe very bulbous, solid, bay and streaked below, strongly reticulate and latericeous above, the apex colored like the tubes, 15 cm. long, 1.3 cm. thick above, 3.5 thick below.

This remarkable species was found several times in the vicinity of Seattle on the ground in woods. It is one of the most difficult

species to preserve, owing to its extremely juicy consistency. It differs from nearly all other boleti in its floccose covering, which resembles that found on the surface of *Boletellus Ananas* and *Strobilomyces strobilaceus*, but the scales are more rigid and conic in shape. The collector may readily distinguish it from these two species by its bay color and the absence of a veil. Both of the other species mentioned possess a conspicuous veil, and the former is tan to brown with a pinkish tint, while the latter is dark-brown or black. Mr. Zeller has photographed this species for me, and Mrs. Murrill made a very accurate colored sketch of it.

Seattle 106 (*type*), 108, 109.

Ceratomyces oregonensis sp. nov.

Pileus convex, firm, solitary, 12 cm. broad; surface bay, even, not viscid, short-tomentose to subglabrous, 12 cm. broad, margin entire or slightly lobed, scarcely projecting; context firm, white, unchanging, mild, odor not characteristic; tubes very large, 2-3 mm. in diameter, depressed and radially elongate about the stem, ventricose, flavous to dull greenish-yellow, melleous within, not changing when bruised; spores oblong-ellipsoid, smooth, melleous, $10-12 \times 4 \mu$; stipe larger below, solid, white within, glabrous, not reticulate, very pale bay, 6.5 cm. long, 2 cm. thick at the center.

This species was collected on the ground in sandy pine barrens on the immediate coast at Newport, Oregon. Although growing in sand, the weather conditions were very humid.

Newport, 1039 (*type*).

CERIOMYCES VISCIDUS (L.) Murrill. Collected once, in sandy pine barrens. Very large, with bay-fulvous cap and rough, shaggy stem, flavous at the base.

Newport, 1099.

Ceratomyces Zelleri sp. nov.

Pileus convex, firm, gregarious to subcespitose, 7-9 cm. broad; surface dry, uneven, bay, covered with a delicate bloom which disappears with age; margin regular, concolorous, somewhat projecting; context firm, cremeous, unchanging, drying easily, mild and slightly mucilaginous to the taste; tubes irregular, of medium size, pale-yellow to greenish-yellow, scarcely changing when

bruised; spores fusiform, smooth, ochraceous, averaging $12 \times 4.5 \mu$; stipe bulbous, solid, red to purple, white or yellow at the base, more or less striate, furfuraceous, about 5 cm. long and 1.5 cm. thick.

This species was very common about Seattle, on rather dry banks in woods. When fully mature, the bloom on the cap disappears and the color is so dark that the sporophore is difficult to see unless a glimpse of the yellow hymenium is obtained. Mr. S. M. Zeller discovered the first specimens (No. 105), and I take pleasure in dedicating the species to him. Mr. L. S. Abrams found a number of specimens when we collected together at La Honda.

Seattle, 105 (*type*), 110, 111; La Honda, 1299.

ROSTKOVITES GRANULATUS (L.) Karst. Common at Newport in pine barrens, where both light and dark forms were found.

Tacoma Prairies, 114; Newport, 1073; Golden Gate Park, 1122.

SUILLELLUS LURIDUS (Schaeff.) Murrill. Common under oaks on the edge of a lake near Tacoma. The form is perfectly typical, with lurid cap and red-dotted stem. Some of the caps are rimose-areolate above, much resembling *Ceriumyces communis*.

Tacoma, 112.

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